Use Attainability Analysis

for

WBID 0167 Brushy Creek

Submitted by Pickett Ray and Silver

To Missouri Department of Natural Resources Water Protection Program

Date Received: June 5, 2007

WBID #: 0167

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A - Water Body Identification

I.	Water Body	Information	(For water body being surveyed)	

vater body finormation (For water body being surveyed)
Water Body Name (from USGS 7.5' quad): Brushy Creek
Missouri Waterbody Identification (WBID) Number: 0167
8-digit HUC: 7110008 County: 7110008
Upstream Legal Description (from Table H): Sur 1708,51N,1W
Downstream Legal Description(from Table H): Mouth
Number of sites evaluated 3
List all sites numbers, listed consequently upstream to downstream:
- Confluence of 2 tributaries, 2, between Site 1 & 3, 3 - closest to N. Cornerstone Church Rd.

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. Attached

II. Subegmentation (fill this section out only in cases where subesymentation is being proposed)

	IATES (UNIVERSAL TRANSVERSE MERCATO		I, IN METERS)
Upstream Coo	rdinates:		Downstream Coordinates:
UTM X	Y		UTM X Y
HORIZONTAL COLL	ECTION METHOD (Indicate the method used to d	etermine the loo	cational data.)
	Global Positioning System (GPS)		Interpolation
Static Mode			Topographic Map or DRG
Dynamic Mode (M	(inematic)		Aerial Photograph or DOQQ
Precise Positionir	ng Service		Satellite Imagery
Signal Averaging			Interpolation Other
Real Time Differe	ntial Processing		·
HORIZONTAL ACCU	RACY ESTIMATE		
	GPS Data Quality		Interpolation Data Quality
FOM	±Meters		Source Map Scale: 1:24,000 1:100,000 Other
EPE	±Feet or ±M	eters	
PDOP			±Feet or ±Meters
Disabaygay E	acility Information (list all norm		

III. Discharger Facility Information (list all permitted dischargers on the stream)

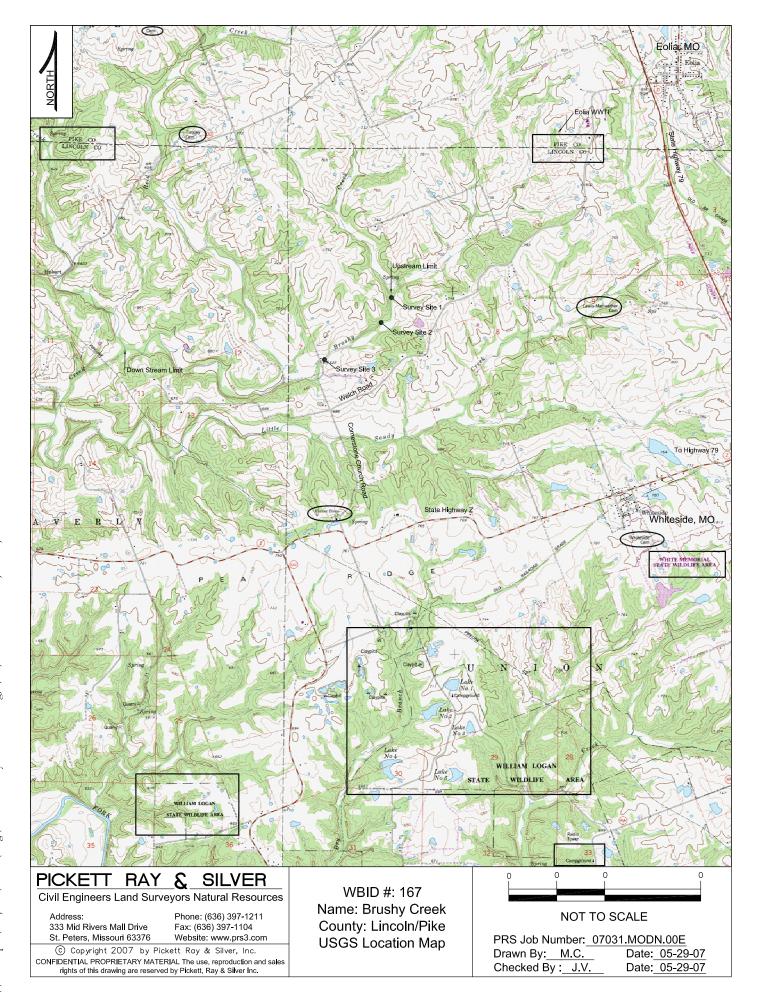
Discharger Facility Name(s): Eolia WWTF Discharger Permit Number(s): MO 0112470

IV. UAA Surveyor (please print legibly)

Name of Surveyor Renee Martin	Telephone Number: 573-875-7844
Organization/Employer: AE Solutions	
Position: Environmental Specialist	

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Signed:	Renee Martin	_{Date:} 5/7/07



	BID#_0167 b#_1	_	Field Data . Da	ata SI	heet E	Recreation 3 - Site (Charact	terizati		
	Date & Time: 174	45 5/7/C)7	(,,,,	401 50 0	1 .			g., road crossing)	:
	Personnel (Data C	ollectors):	R. Martin & J.	Hrabil	·	Closest	to Morgar	n Rd Br	ushy Creek ne	ar confluence of 2 tributaries
	Current Weather C	•		mabii	`		Name: Eol			
						_				
	weather Condition	is for Pasi	t 10 days: unknow	'n		Permit	Number: M	0 01124	+70 _	
Si	te Locations:		rought : Phase I						own 🗏	
			TM X: 0668259		CATOR	ROJECTION	Y: 06682			
			METHOD (Indicate the r		sed to dete	ermine the loc				
			Positioning System (Interpola	ation
	Static Mode Dynamic Mode (Kiner	matic)				Х		ic Map or DI ograph or D		
	Precise Positioning S						Satellite Im		Odd	
	Signal Averaging						Interpolation	n Other Re	al Time Different	tial Correction with
	Real Time Differential	l Processing	g					Po	st Processing	_
	HORIZONTAL ACCU	RACY EST	IMATE						Ü	
			GPS Data Quality						Interpolation Da	ata Quality
	FOM	±	Meters				Sour	ce Map Sca	le: 1:24.000 1:100	0,000 Other
	EPE	± <u>51</u>	Feet or ±		Meters			•	Feet or ±	
	PDOP								reet or ±	INICIOIS
Ph	otos:									
	Ups	stream Pho	otos		D	ownstream	Photos			Other Photos
	Photo ID#	Pho	oto Purpose	Photo	ID#	P	hoto Purpos	se	Photo ID#	Photo Purpose
	See Attached	Photos	3		7-1-19 7-1-20		nm Transect #1, eam Transect #1			
Us	es Observed*	: (Uses a	actually observe	ed at t	ime of	survey.)				
	☐ Swimming		☐ Skin diving		□ SC	UBA divin	g	☐ Tubi	ng	☐ Water skiing
	☐ Wind surfing		☐ Kayaking		□ Во	ating		☐ Wad	ing	☐ Rafting
	☐ Hunting		☐ Trapping		☐ Fis	hing		■ None	e of the above	☐ Other:
	Describe: (Include <i>Use Interview</i> whe			ting, ph	oto-docu	mentation (of evidence	of recreati	ional uses, etc. U	Jse Data Sheet D- Recreational
	rrounding Consultation in the consultation in		s*: (Mark all tha	at pron	note or	impede r	ecreation	al uses. 1	Attach photos	of evidence or
	☐ City/county pa	rks	☐ Playgrounds		MDC con	servation la	ınds	☐ Urba	n areas	☐ Campgrounds
	☐ Boating access	ses	☐ State parks	ו 🗆	National	forests		☐ Natu	re trails	☐ Stairs/walkway
	☐ No trespass sig	n	☐ Fence		Steep slo	pes		None	of the above	Other:
	Comments: A	ricul	ture Field	10						

Indications of Human Use*: (attach photos)

□ Roads □ Rope swings □ Foot paths/prints □ Dock/platform □ Livestock Watering □ RV / ATV Tracks
□ Camping Sites □ Fire pit/ring □ NPDES Discharge □ Fishing Tackle □ Other:

Comments: None

Upstream View's	Physical Dimen	nsions: Is	there any water p	present at	this view?	Yes □ No		
		If	so, is there an o	bvious cu	arrent?	✓ Yes □ No		
Select one of the f								
Channel Feature	Distance from ac	ccess (m)	Width (m)	Lengt	th (m)	Median Depth (m)	Max. Dep	th (m)
RIFFLE								
RUN	60		7.0	3	0	0.2	0.3	
POOL								
Downstream Viev	v's Physical Din	nansians:	Ic there any wat	er nrecen	t at this vie	ew? □ Yes □ No		
Jownstieam viev	v s i nysicai Din	nensions.	If so, is there an	•		□ Yes □ No		
Select one of the f	allowing chann	el features		louvious	Current?		U	
Channel Feature	Distance from ac		Width (m)	Lengt	th (m)	Median Depth (m)	Max. Dep	th (m)
RIFFLE						1 ()	·	
RUN								
POOL								
strate*: (These	values should add	up to 100%).)				1	
		- F	··)					
U	1*: (Note amount	,	- % Sand	at the asso	% Silt	- % Mud/Clay	100 %	Bedr
natic Vegetation Algae all over s	n*: (Note amount	of vegetation		at the asso		<u> </u>	100 %	Bedro
natic Vegetation Algae all over s ter Characteris	n*: (Note amount	of vegetation	on or algal growth			<u> </u>	100 %	Bedro
natic Vegetation Algae all over s ter Characteris Odor:	1*: (Note amount substrate	of vegetation	on or algal growth		essment site	·)	100 %	Bedr
natic Vegetation Algae all over s ter Characteris Odor: Color:	*: (Note amount substrate tics*: (Mark all to Sewage	of vegetation	on or algal growth	cal	essment site	Other:	100 %	Bedre
uatic Vegetation Algae all over s ter Characteris Odor: Color:	tics*: (Mark all to Sewage	of vegetation that apply.) Musky	on or algal growth	cal	essment site ■ None □ Milky	□ Other:	100 %	Bedr
Algae all over s ter Characteris Odor: Color: Bottom Deposit: Surface Deposit: mments: Please is information is not prehensive understa	tics*: (Mark all to be used solely unding of water community on use analysis but	of vegetation that apply.) Musky Green Solids Scum itional corremova anditions. Cut may point	Chemi Gray Fine so Foam mments () to the onsequently, this is to conditions that	ediments is form. use designinformation need furth	■ None □ Milky □ None ■ None nation but rain is not integer analysis	Other:	ore nce a ise.	

Recreational Use Attainability Analysis Field Survey Sheet

i																						
	Waterb	ody ID:	016	7		Site #:	016	7-1											Ived O	xygen		
		ted Cha			_					ank widtl		-4				Diss	solved C)xygen:	9.3		(mg/L)	
							, ,			ank widti	n and w	ater)				Diss	solved C)xygen:	112.	.7	(% sat)	
	GPS Lo	ocation: UTM X:	668	259		ITM Y	434	1438									Specific				(µS/cm)	
	,	Horizor	ntal Accı	uracy Es	stimate (GPS D	ata Qua	lity):	+/- 51		(feet)	ī	PDOP:				r Tempe					
	Averag	e Strear	n Width	.8			(meters)	Lend	gth of Su	ırvev Se	egment:	160	(1	meters)	Wate	r Tempe	erature:	20.0		(°C)	
									(20x av	erage s	tream w	ridth)		,	,							
	Field	d Staff:	Rene	e Mar	tin & .	lenny	Hrabi	k				•										
										Tran	sect C	ross-S	ection									
	_	1	_	2	_	3	_	4	_	5	_	6	0	7	_	8	_	9		0	11	1
/leasurement	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0.0	<0.1	1.4	0.1	0.0	0.1	0.6	0.1	0.1	0.1	2.3	0.1	1.9	0.1	1.5	0.1	0.0	0.1	0.2	0.1	1.4	0.1
2	0.95	<0.1	2.0	0.1	0.7	0.2	1.2	0.1	0.7	<0.1	2.4	0.1	2.4	0.1	1.8	0.1	8.0	0.1	0.9	0.2	2.3	0.1
3	1.9	<0.1	2.6	0.1	1.4	0.2	1.8	0.2	1.3	0.0	2.5	0.1	2.9	0.1	2.1	0.15	1.6	0.2	1.6	0.2	3.2	0.0
4	2.85	<0.1	3.2	0.1	2.1	0.2	2.4	0.1	1.9	0.0	2.6	0.1	3.4	0.1	2.4	0.2	2.4	0.2	2.3	0.3	4.1	0.0
5	3.8	<0.1	3.8	0.1	2.8	0.1	3.0	0.1	2.5	<0.1	2.7	0.1	3.9	0.2	2.7	0.2	3.2	0.2	3.0	0.3	5.0	0.0
6	4.75	<0.1	4.4	0.1	3.5	<0.1	3.6	0.1	3.1	<0.1	2.8	0.1	4.4	0.2	3.0	0.1	4.0	0.2	3.7	0.2	5.9	0.0
7	5.7	<0.1	5.0	0.2	4.2	0.3	4.2	0.1	3.7	0.1	2.9	<0.1	4.9	0.2	3.3	0.1	4.8	0.2	4.4	0.2	6.8	0.0
8	6.65	<0.1	5.6	0.2	4.9	0.3	4.8	<0.1	4.3	0.1	3.0	<0.1	5.4	0.3	3.6	0.1	5.6	0.2	5.1	0.2	7.7	0.0
9	7.6	<0.1	6.2	0.1	5.6	0.1	5.4	0.0	4.9	0.1	3.1	<0.1	5.9	0.2	3.9	0.2	6.4	0.25	5.8	0.1	8.6	0.0
10	8.55	<0.1	6.8	0.1	6.3	0.1	6.0	0.0	5.5	0.1	3.2	<0.1	6.4	0.2	4.2	0.2	7.2	0.25	6.5	0.1	9.5	0.0
11	9.5	<0.1	7.4	0.1	7.0	0.1	6.6	<0.1	6.1	0.1	3.3	<0.1	6.9	0.1	4.5	0.1	8.0	0.3	7.2	<0.1	10.4	0.0
12	9.8	0.0	7.6	0.0	7.1	0.0	6.9	0.0	8.2	0.0	6.5	0.0	7.0	0.0	5.0	0.0	8.5	0.0	7.2	0.0	10.4	0.0
eature Type (riffle, run, or pool)	Run		Run		Run		Run		Riffle)	Riffle	;	Run		Run		Run		Run		Riffle	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects inorder of up to downstream.

Signed: Renee Martin

Date: _5/7/07

Mark dry depth measurments as 0; measurements less than 0.1m as < 0.1; and greater than 1m as > 1

		(mı	ust be c		l for each	t erizati site)		
Date & Time: 1815	5/7/07			Site Loc	ation Descr	ription (e.g	g., road crossing)	:
Personnel (Data Colle	ectors): R. Martin & J.	Hrabil	K					
Current Weather Con	ditions: clear			Facility	Name: Eol	ia WWT	F	
Weather Conditions f	For Past 10 days: unknov	vn		Permit N	Number: M	O 01124	170	
Drought Conditions?	No drought □; Phase I	□. Phac	e II □· Þ	hase III 🗆	· Phase IV	□• Unkn	own 🗐	
te Locations:	110 drought 🗀, I hase I	<u></u>	<u>сп ш, г</u>	nase III 🗀	, i nase i v	□, UIKIN	5WII 🗀	
LOCATION COORDINA	TES (UNIVERSAL TRANSVE	RSE MEF	RCATOR P	ROJECTION	I, IN METERS	S)		
Site GPS Coordina	tes: UTM X: 434130	5			Y:43413	305		
	TION METHOD (Indicate the		sed to dete	ermine the loc	ational data.))		
Static Mode	Global Positioning System	(GPS)			Topographi	ic Map or Di	Interpola	tion
Dynamic Mode (Kinemat	ic)					ograph or D		
Precise Positioning Servi	·				Satellite Im	agery		
Signal Averaging					Interpolatio	n Other Re	al Time Different	ial Correction with
Real Time Differential Pr	ocessing					Po	st Processing	<u> </u>
HORIZONTAL ACCURA	CY ESTIMATE						_	
	GPS Data Quality						Interpolation Da	ata Quality
FOM	±Meters				Sour	ce Map Sca	le: 1:24,000 1:100	,000 Other
EPE	<u>± 22</u> Feet or ± _		_Meters			•	Feet or ±	
PDOP								
otos:								
Upstre	am Photos		D	ownstream	Photos			Other Photos
Photo ID#	Photo Purpose	Photo	ID#	Pl	hoto Purpos	se	Photo ID#	Photo Purpose
See Attached P	hotos		7-2-21 7-2-22		m Site #2, Trans am Site #2, Tra			
es Observed*: (Uses actually observ	ed at t	ime of	survey.)				
☐ Swimming	☐ Skin diving			UBA diving	g	☐ Tubi	ng	☐ Water skiing
☐ Wind surfing	☐ Kayaking		□ Воа	ating		☐ Wad	ing	☐ Rafting
☐ Hunting	☐ Trapping		☐ Fisl	hing		■ None	e of the above	☐ Other:
Describe: (Include nu		ating, ph			of evidence			Se Data Sheet D- Recreatio
rrounding Condusual items of inter	litions*: (Mark all thest.)	at pron	note or	impede r	ecreationa	al uses. A	Attach photos	of evidence or
☐ City/county parks	☐ Playgrounds		MDC con	servation la	ınds	☐ Urba	n areas	☐ Campgrounds
☐ Boating accesses	☐ State parks	□ 1	National 1	forests		☐ Natur	re trails	☐ Stairs/walkway
	☐ Fence	ПП	Steep slop	200			of the above	Other:
☐ No trespass sign	□ Fence		steep stop	pes		L I TOHC	of the above	□ Other.

	(
Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	□ RV / ATV Tracks
☐ Camping Sites	S	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:
Comments: Nor	ne				

Jpstream View's	Physical Dimen	sions: Is t	here any water p	present at	this view?	Yes □ No		
		If	so, is there an o	bvious cu	rrent?	✓ Yes □ No		
Select one of the f								
Channel Feature	Distance from ac	cess (m)	Width (m)	Length	h (m)	Median Depth (m)	Max.	Depth (m)
RIFFLE								
RUN	160		5.0	20)	0.25		0.3
POOL								
Downstream View	y's Physical Dim	ansions:	Ic there ony wet	ar nrasant	at this wie	ew? □ Yes □ No		
ownstream view	v s i nysicai Din		Is there any wat If so, is there an	•		□ Yes □ No		
select one of the f	allowing channe			Ouvious	current:		J	
Channel Feature	Distance from ac		Width (m)	Length	h (m)	Median Depth (m)	Max.	Depth (m)
RIFFLE				<u> </u>	` ′	1 \ /		/
RUN								
POOL								
strate*: (These	values should add	up to 100%.	.)		W-			
\		1			0 / 0 ! !	0/ 1/61		01.5
	*: (Note amount	,	n or algal growth	at the asse	% Silt	- % Mud/Clay	75	% Bedr
natic Vegetation Some algae on	*: (Note amount of substrate	of vegetatio	<u>'</u>	at the asse	Į.	<u> </u>	75	% Bedr
natic Vegetation Some algae on ter Characteris	*: (Note amount of substrate	of vegetatio	<u>'</u>		Į.	<u> </u>	75	% Bedro
natic Vegetation Some algae on ter Characteris Odor:	*: (Note amount substrate tics*: (Mark all t	of vegetatio	n or algal growth		ssment site	e)	75	% Bedr
satic Vegetation Some algae on ter Characteris Odor: Color:	*: (Note amount substrate tics*: (Mark all t	of vegetation hat apply.) Musky	n or algal growth	cal	ssment site	Other:	75	% Bedr
25 % Cobble Latic Vegetation Some algae on ter Characteris Odor: Color: Bottom Deposit: Surface Deposit:	substrate tics*: (Mark all t	of vegetation hat apply.) Musky Green	n or algal growth Chemic	cal	■ None □ Milky	Other:	75	% Bedr
ter Characteris Odor: Color: Bottom Deposit: Surface Deposit: mments: Please as is information is not prehensive understa sion on the recreation	substrate tics*: (Mark all t Sewage Clear Oil attach any addit to be used solely anding of water corn use analysis but	hat apply.) Musky Green Solids Scum tional comfor removal additions. Commay point t	□ Chemic □ Gray □ Fine se □ Foam Imments () to this of a recreational sonsequently, this is o conditions that it	ediments is form. use designation	None None None None None is not integer analysis	Other:	ore nce a ise.	

Recreational Use Attainability Analysis Field Survey Sheet

	Waterbody ID: 0167 Site #: 0167-2													Disso	Ived O	red Oxygen						
	0.1												Diss	solved C)xygen:	9.35)	(mg/L)				
	Estimat	ted Cha	nnel Inc	I Incision: U. I (m) (height between low bank width and water)								Diss	solved C	Oxygen: 106.1 (% sat)								
	GPS Location: 0668307 UTM Y: 4341305						1305								Specific Cond: 300.4 (µS/cm)						,	
	Horizontal Accuracy Estimate (GPS Data Quality							lity):	+/- 22		(feet)		PDOP:			23.0						
	Averag	e Strear	n Width	8			(1	meters)	Leng	gth of Su	ırvey Se	gment:	160	(r	meters)	Wate	r Tempe	erature:			(°C)	
	Average Stream Width: 8 (meters) Length of Survey Segment: 160 (meters) (20x average stream width) Field Staff: Renee Martin & Jenny Hrabik																					
	Transect Cross-Section																					
	01 02 Distance Distance		2	0 Distance	3	04		0 Distance	5	06		07 Distance		Distance	8	09 Distance		10 Distance		11 Distance		
Measurement	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)	(m)	Depth (m)
1	1.3	0.1	7.0	0.1	3.0	0.1	0.1	0.2	0.0	<0.1	0.0	0.1	0.0	0.1	1.4	0.1	1.5	0.1	0.0	<0.1	0.4	0.1
2	2.0	<0.1	7.4	0.1	3.6	0.1	1.1	<0.1	0.65	<0.1	0.6	0.1	0.25	0.1	1.46	0.1	2.0	<0.1	0.32	<0.1	0.8	0.1
3	2.7	<0.1	7.8	0.1	4.2	0.1	2.1	<0.1	1.3	<0.1	1.2	0.2	0.5	0.1	1.52	0.1	2.5	<0.1	0.64		1.2	0.2
4	3.4	0.1	8.2	<0.1	4.8	0.1	3.1	0.0	1.95	<0.1	1.8	0.2	0.75	0.2	1.58	0.1	3.0	0.1	0.96	<0.1	1.6	0.2
5	4.1	0.1	8.6	<0.1	5.4	0.2	4.1	0.0	2.6	<0.1	2.4	0.3	1.0	0.2	1.64	0.1	3.5	0.1 <0.1	1.28	<0.1	2.0	0.3
6	4.8 5.5	0.1	9.0	<0.1	6.0	0.1	5.1 6.1	<0.1	3.25	<0.1	3.0	0.3	1.25 1.50	0.1	1.7 1.76	0.1	4.0 4.5	0.1	1.6 1.92	<0.1	2.4	0.3
7	6.2	0.1	9.4	<0.1	7.2	0.1	7.1	0.1	4.55	<0.1	4.2	0.3	1.75	0.2	1.82	0.1	5.0	0.1	2.24	<0.1	3.2	0.3
8	6.9	0.1	10.2	<0.1	7.8	<0.1	8.1	<0.1	5.2	<0.1	4.8	0.3	2.00	0.1	1.88	0.1	5.5	0.1	2.56	<0.1	3.6	0.3
9	7.6	0.1	10.2	0.1	8.4	0.1	9.1	<0.1	5.85	<0.1	5.4	0.3	2.25	0.1	1.94	0.1	6.0	0.1	2.88	<0.1	4.0	0.2
10 11		0.1	11.0	0.1	9.0	0.1	10.1	<0.1	6.5	<0.1	6.0	0.3	2.50	0.1	2.0	<0.1	6.5	<0.1	3.2	<0.1	4.4	0.1
	2.5		11.3		9.1	_		0.0			6.2	0.0	2.6	0.0	2.0	0.0	6.5		3.2			
12		0.0	Run		_	0.0	Riffle		Riffle		Run	0.0	Run	0.0	Riffle	0.0	Run	0.0	S.Z Riffle		Run	0.0
eature Type (riffle, run, or pool)	Run		Kun		Run		Kille		KIIIIE	;	Kun		Kun		KIIIIE		Run		KIIIIE		Tuil	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects inorder of up to downstream.

Signed: Renee Martin Dat

__{Date:} _5/7/07

Mark dry depth measurments as 0; measurements less than 0.1m as < 0.1; and greater than 1m as > 1

		(m			for each	erizati site)							
Date & Time: 5/7/07	7 1900			Site Loc	Site Location Description (e.g., road crossing):								
Personnel (Data Colle	k	Near	Near N. Cornerstone Church Rd.										
Current Weather Cond	ditions: clear			Facility	Facility Name: Eolia WWTF								
Weather Conditions for	or Past 10 days: unkno	wn		Permit N	Number: M(O 01124	170						
Drought Conditions?:	No drought □; Phase I	□; Phas	se II □; P	hase III 🗆	; Phase IV	□; Unkne	own 🗏						
te Locations:													
	TES (UNIVERSAL TRANSVI		RCATOR P	ROJECTION									
	es: UTM X: 434113				Y:43411								
	TION METHOD (Indicate the Blobal Positioning System		sed to dete	ermine the loc	ational data.)		Interpola	tion					
Static Mode	Blobal Fositioning System	(GF3)			Topographi	ic Map or DI	•	tion					
Dynamic Mode (Kinemati					Aerial Photo								
Precise Positioning Service	ce				Satellite Ima								
Signal Averaging					Interpolation Other Real Time Differential Correction with								
Real Time Differential Pro	•					Po	ost Processing						
HORIZONTAL ACCURAC	GPS Data Quality						Interpolation Da	ta Quality					
FOM	± Meters						interpolation Da	,					
EPE	± 21 Feet or ±		Meters		Sourc	-	le: 1:24,000 1:100,						
PDOP			_			±_	Feet or ±	Meters					
otos:													
	am Photos		D	ownstream	Photos			Other Photos					
Photo ID#	Photo Purpose	pose Photo ID#			noto Purpos	se	Photo ID#	Photo Purpose					
See Attached Ph	notos		57-3-23 57-3-24		m Site #3, Transect #1 am Site #3, Transect #1								
es Observed*: (I	Uses actually obser	ved at t	ime of	survey.)									
☐ Swimming	☐ Skin diving			UBA diving	g	☐ Tubi	ng	☐ Water skiing					
☐ Wind surfing	☐ Kayaking		□ Воа	ating		☐ Wad	ing	☐ Rafting					
☐ Hunting	☐ Trapping		☐ Fish	hing		■ None	e of the above	☐ Other:					
	mber of individuals recre onducting interviews.)	eating, ph	oto-docu	mentation o	of evidence	of recreati	ional uses, etc. U	se Data Sheet D- Recreati					
rrounding Condusual items of interest	itions*: (Mark all tl est.)	nat proi	note or	impede r	ecreationa	al uses. A	Attach photos	of evidence or					
☐ City/county parks	☐ Playgrounds		MDC con	servation la	inds	☐ Urba	in areas	☐ Campgrounds					
☐ Boating accesses	☐ State parks		National 1	forests		☐ Natu	re trails	☐ Stairs/walkway					
☐ No trespass sign ☐ Fence			Steep slop				of the above	Other:					

Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	□ RV / ATV Tracks		
☐ Camping Site	s	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:		
Comments: No	ne						

* Page Two – Data	Sheet B for W	_{BID #} 01	67 :					
Stream Morpholog Upstream View's	gy.			oresent at	this view	Yes □ No		
1	v		so, is there an o			✓ Yes □ No		
Select one of the	following channe		,					
Channel Feature	Distance from acc		Width (m)	Lengt	h (m)	Median Depth (m)	Max.	Depth (m)
RIFFLE								
RUN								
POOL	120		6.5	20)	0.35		0.4
Downstream Vie	w's Physical Dim		s there any wat	•		ew? □ Yes □ No		
Select one of the	following channe	l features:						
Channel Feature	Distance from acc	cess (m)	Width (m)	Lengt	h (m)	Median Depth (m)	Max.	Depth (m)
RIFFLE								
RUN POOL								
		1000()						
Substrate*: (These					0/ 0:14	0/ M 1/C1	75	0/ D - 1
25 % Cobbl	le - % Gra	avei -	% Sand	-	% Silt	- % Mud/Clay	75	% Bedroo
Algae on subs								
Water Characteri Odor:	Stics^: (Mark all the Sewage	nat apply.) Musky	☐ Chemi	cal	None	☐ Other:		
Color:	☐ Clear	☐ Green	☐ Gray		☐ Milky	☐ Other:		
Bottom Deposit:	☐ Sludge	□ Solids	Fine se	diments	□ None	☐ Other:		
Surface Deposit:	□ Oil	□ Scum	☐ Foam		None	☐ Other:		
*This information is no comprehensive underst decision on the recreation. *Please verify that your Surveyor's Signature.	ot to be used solely fanding of water contion use analysis but ou have completed: Renee Martin	For removal of ditions. Commay point to	of a recreational nsequently, this is conditions that	use design nformation need furth l applical Date o	n is not interer analysis ole boxes of Survey:	ended to directly influe or that effect another unand that everything 5/7/07	nce a se.	ıplete.
Organization: AE	Solutions			Position	ı: Env	. Specialist		_

Recreational Use Attainability Analysis Field Survey Sheet

	0167 0167 2													Dissolved Oxygen									
	Waterbody ID: 0167 Site #: 0167.3												Die	salvad C)vvaon:	7.43		(mg/L)					
	Estimated Channel Incision: <a><1.0 (m) (height between low bank width and water)																						
	GPS Location:											Diss	solved C)xygen:	en: 90.2 (% sat)								
	GPS Location: UTM X: 0668202 UTM Y: 4341138																Specific	Cond:	334 (µS/cm)			,	
	Horizontal Accuracy Estimate (GPS Data Quality): +/- 21 (feet) PDOP:										Wate	r Tempe	erature:	24.2		(°C)							
	Average Stream Width: 6 (meters) Length of Survey Segment: 150 (meters)																(-)						
	Field	d Staff:	Rene	e Mart	in & Je	ennv H	łrabik		(20x av	erage s	tream w	idth)											
										Trans	sect C	rocc S	oction										
)1	0	2	0	2		4)5		6	0.	7	0	.0	0	•	10		11		
Measurement	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance	Depth (m)	Distance	Depth (m)	Distance	Depth (m)	
1	0.5	0.1	1.0	0.1	0.5	0.1	0.7	0.1	0.6	0.1	0.3	0.1	0.0	0.1	0.4	0.1	1.0	0.1	0.5	0.1	1.2	0.1	
2	0.9	0.1	1.25	0.1	1.0	0.1	0.95	0.1	0.7	0.2	0.6	0.3	0.6	0.4	0.9	0.2	1.5	0.2	0.75	0.2	1.5	0.1	
3	1.3	0.1	1.5	0.1	1.5	0.2	1.2	0.2	0.8	0.1	0.9	0.3	1.2	0.3	1.4	0.3	2.0	0.3	1.0	0.2	1.8	0.1	
4	1.7	0.1	1.75	<0.1	2.0	0.2	1.45	0.2	0.9	0.2	1.2	0.1	1.8	0.3	1.9	0.2	2.5	0.3	1.25	0.2	2.1	<0.1	
5	2.1	0.1	2.0	0.1	2.5	0.3	1.7	0.2	1.0	0.2	1.5	0.1	2.4	0.2	2.4	0.4	3.0	0.3	1.50	0.2	2.4	<0.1	
6	2.5	0.1	2.25	0.1	3.0	0.3	1.95	0.2	1.1	0.2	1.8	0.1	3.0	0.2	2.9	0.4	3.5	0.3	1.75	0.2	2.7	<0.1	
7	2.9	0.1	2.5	0.1	3.5	0.3	2.2	0.2	1.2	0.1	2.1	0.2	3.6	0.2	3.4	0.4	4.0	0.3	2.0	0.2	3.0	<0.1	
	3.3	0.1	2.75	0.1	4.0	0.2	2.45	0.1	1.3	0.1	2.4	0.1	4.2	0.2	3.9	0.3	4.5	0.3	2.25	0.2	3.3	0.1	
9	3.7	0.1	3.0	0.1	4.5	0.2	2.7	0.1	1.4	0.1	2.7	0.1	4.8	0.1	4.4	0.3	5.0	0.3	2.50	0.2	3.6	0.1	
10	4.1	0.1	3.25	<0.1	5.0	0.1	2.95	0.1	1.5	0.1	3.0	<0.1	5.4	<0.1	4.9	0.2	5.5	0.2	2.75	0.1	3.9	0.1	
11	4.5	0.1	3.50	<0.1	5.5	0.1	3.2	0.1	1.6	0.1	3.3	<0.1	6.0	0.1	5.4	0.1	6.0	0.1	3.0	0.1	4.2	0.1	
	1 Q	0.0		0.0	6.4	0.0	3.5	0.0	2.8	0.0	4.0	0.0	6.2	0.0	6.4	0.0	7.0	0.0	4.0	0.0	4.5	0.0	
12	Run	1	Run		Run	2.3	Run		Riffle	<u> </u>	Run		Run		Pool		Run	2.3	Run	7.0	Riffle		
eature Type (riffle, run, or pool)			. turi		Tan					•	7 (011		. tuii		. 55.				· tarr				

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

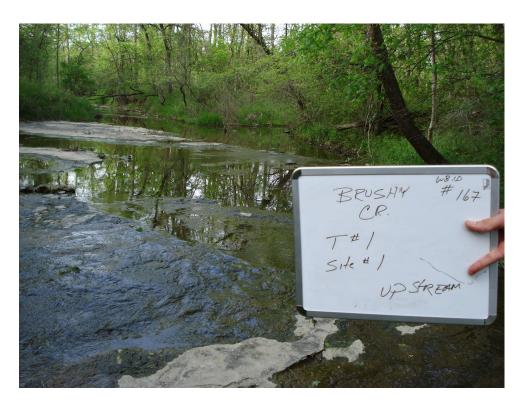
GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects inorder of up to downstream.

Signed: Renee Martin Dat

Date: _5/7/07

Mark dry depth measurments as 0; measurements less than 0.1m as < 0.1; and greater than 1m as > 1



1. Upstream Site 1, Transect 1



2. Downstream Site 1, Transect 1



3. Upstream Site 2, Transect 1



4. Downstream Site 2, Transect 1



5. Upstream Site 3, Transect 1



6. Downstream Site 3, Transect 1

» UAA Comments - Anne Peery/WPCP/DEQ/MODNR



"Renee Martin" <rmartin@aesolutionsmo .co m>

03/19/2008 04:43 PM

To anne.peery@dnr.mo.gov

CC

bcc

Subject UAA Comments

Anne,

Let me know if you need anything else.

Regards, Renee

Renee Martin

AE Solutions

1123 Wilkes Blvd., Ste 300 Columbia, MO 65201 Office: 573-875-7844

Fax: 573-875-7845

rmartin@aesolutionsmo.com

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DNR_Comments_0167.doc DNR_Comments_0950.doc

WBID# 0167 Brushy Creek

Surveyor: Renee Martin Organization: AE Solutions

Stream sites 1-3 were accessed in the upper portion of the creek because the landowner would not allow us access beyond North Cornerstone Church Road.